

Plant soybean early to increase yield

February 2 2009

Over the past decade, two-thirds of Indiana growers have shifted to planting their soybean crop earlier because they believe that earlier planting increases yield. Planting date is probably one of the most important yet least expensive management decisions that significantly affects soybean yield. Few scientists, however, have studied the effect of early-planting dates on soybean yield components and the impact of early planting on seed composition.

To answer this question, Andrew P. Robinson and colleagues at Purdue University conducted a 2-year (2006-2007) study at West Lafayette, IN. The research was supported by the Indiana Soybean Alliance and the Indiana Crop Improvement Association.

Three soybean cultivars were planted approximately every 2 weeks starting in late March and ending in early June. Detailed measurements of soybean yield components (pod number, seeds per pod, and seed mass), nodes, and reproductive nodes were counted by hand just before harvest. Oil and protein concentrations were determined by near-infrared reflectance spectroscopy.

A recent article in the January-February 2009 issue of *Agronomy Journal* gives detailed results from this study. This research was presented at the American Society of Agronomy annual meetings in October 2008 at Houston, TX, and at the American Seed Trade Association, Corn, Sorghum, and Soybean annual meetings in December 2007 at Chicago, IL.

"The research found that yield was consistently the highest when planting from April to early May," comments Robinson.

Pods-per-square-meter were a good indicator of yield potential of early planted soybean, whereas seed mass was a good indicator of late-planted (late-May and early-June) soybean. Oil concentration was higher at early plantings and protein concentration was higher at late planting dates. As the temperature increased during R6 soybean growth stage (full seed) oil concentration increased and protein concentration decreased.

"Our research shows that early planting does increase yield, but can vary by year and cultivar choice. Our research also suggests that early planting may lead to increased oil concentration of Midwest soybean. However, early planting may not be for everyone," warns Robinson. "Further research is needed to quantify the impact early planting has on seed quality."

Paper: agron.scijournals.org/cgi/content/full/101/1/131

Source: American Society of Agronomy

Citation: Plant soybean early to increase yield (2009, February 2) retrieved 22 September 2024 from <https://phys.org/news/2009-02-soybean-early-yield.html>

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